

573.5 Payment

Each size of underdrain pipe will be paid for at the Contract Price per linear foot (meter) as follows:

A. Underdrain Pipe Only

Payment for pipe under this Item will include:

- Ground preparation
- Excavation
- Backfilling
- Disposal of surplus material
- All appurtenances required to complete the Item including screens, tees, wyes, ells, and markers

B. Underdrain Pipe Including Drainage Aggregate

Payment for pipe under this Item will include specified drainage aggregate and all items listed under Subsection 573.5.A above.

Underdrain pipe including drainage aggregate to depths greater than 6 ft (1.8 m) below the final elevation established for the top of the trench will have an adjusted Unit Price. This price will be computed by increasing the Contract Unit Price by a percentage based on the extra depth as follows:

| | |
|--|--|
| From over 6 ft (1.8 m) to and including 8 ft (2.4 m) | At contract price plus 20 percent |
| Over 8 ft (2.4 m) deep | By supplemental agreement or force account |

C. Contaminated Aggregate

Removal and replacement of contaminated aggregate will not be paid for separately, but will be included in the Bid Price for underdrain pipe.

Payment will be made under:

| | | |
|--------------|---|-------------------------|
| Item No. 573 | Underdrain pipe only ____ in (mm) | Per linear foot (meter) |
| Item No. 573 | Underdrain pipe including drainage aggregate ____ in (mm) | Per linear foot (meter) |

573.5.01 Adjustments

General Provisions 101 through 150.

Section 574—Edgedrains

574.1 General Description

This work includes constructing edgedrains with perforated pipe according to the Specifications and to the details, lines, and grades shown in the Plans, or as directed by the Engineer.

574.1.01 Definitions

General Provisions 101 through 150.

574.1.02 Related References

A. Standard Specifications

Section 400—Hot Mix Asphaltic Concrete Construction

Section 800—Coarse Aggregate

Section 839—Corrugated Polyethylene Underdrain Pipe

Section 840—Corrugated Aluminum Alloy Pipe

Section 843—Concrete Pipe

Section 881—Fabrics

B. Referenced Documents

GDT 59

QPL 28

574.1.03 Submittals

General Provisions 101 through 150.

574.2 Materials

Ensure that materials meet the requirements of the following Specifications.

Use pipe specified below unless the Plans state otherwise. Use only one type of pipe in each continuous, interconnecting line.

| Material | Section |
|---|----------------|
| Corrugated Aluminum Alloy Underdrain Pipe | 840.2.02 |
| Concrete Underdrain Pipe | 843.2.03 |
| Corrugated Polyethylene Underdrain Pipe | 839 |
| Drainage Aggregate Backfill, Size No. 78 | 800.2.01 |
| Asphaltic Concrete | 400 |
| Plastic Filter Fabric (Non-woven) | 881.2.05 |

574.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

574.3 Construction Requirements**574.3.01 Personnel**

General Provisions 101 through 150.

574.3.02 Equipment

General Provisions 101 through 150.

574.3.03 Preparation

Before placing edgedrains, pressure grout and cure pavement slabs in the immediate area. Do not begin work until the Engineer determines that pavement slabs are stable.

574.3.04 Fabrication

General Provisions 101 through 150.

574.3.05 Construction

Complete any opened trenches, including the asphalt cap, each working day. Install edgedrains with other operations on the Project to prevent conflict, damage, or improper infiltration of other materials.

A. Excavating

Excavate according to the details and elevations shown on the Plans or as directed by the Engineer.

B. Placing Filter Fabric

Place filter fabric according to Plan details.

If the drainage aggregate or the filter fabric become contaminated or the filter fabric is damaged during the backfilling operation, remove the contaminated or damaged materials and replace them at no additional cost to the Department.

C. Laying Pipe

Lay pipe according to the Plan details, with perforations on the underside of the pipe, unless otherwise directed by the Engineer.

1. Lay bell and spigot and tongue and groove pipe with the bell or grooved end upstream and the bells embedded in the foundation material.

2. Firmly connect the joints.
3. Connect butt joint pipes securely using the appropriate size and type of band or coupling.
4. Install the following miscellaneous Items according to the Plans or as otherwise specified:
 - Pipe screens
 - Caps
 - Plugs
 - Covers
 - Ells
 - Wyes
 - Tees
 - Markers

D. Backfilling

After laying the pipe, place the additional backfill material in 6 in (150 mm) layers.

1. Before compacting, establish the target density as 1.18 times the average of 5 dry-density determinations made on the material in the trench. Space the 5 determinations over at least 500 ft (150 m), and determine them using the 6-in (150 mm) direct transmission density mode according to GDT 59.
2. Thoroughly compact each layer to 100 percent of the target density and complete to the depth shown on the Plans, details, or as directed by the Engineer.
3. Do not disturb the pipe alignment or damage the filter fabric.
4. Place a compacted asphaltic concrete cap on the trench as shown in the Plan details or as directed by the Engineer.

E. Marking

Mark each outlet end of the drainage system according to Plan details.

F. Protecting from Contamination

Protect the backfill material from contamination by foreign matter.

If aggregates become contaminated, remove the contaminated portion and replace it with clean material before placing succeeding layers.

574.3.06 Quality Acceptance

General Provisions 101 through 150.

574.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

574.4 Measurement

The quantity of edgedrain pipe, including backfill material and filter fabric, complete in place and accepted is measured in linear feet (meters) along each line or lateral, from center to center of junctions and fittings.

574.4.01 Limits

General Provisions 101 through 150.

574.5 Payment

Each size of edgedrain pipe will be paid for at the Contract Price per linear foot (meter).

Payment for pipe under this Item includes:

- Preparation
- Excavation
- Backfilling
- Specified backfill materials and filter fabric

- Disposal of surplus material
- Screens, tees, wyes, and ells
- The asphaltic concrete cap over the trench

Payment will be made under:

| | | |
|--------------|--|-------------------------|
| Item No. 574 | Edgedrain pipe, including backfill material and filter fabric ____ in (mm) | Per linear foot (meter) |
|--------------|--|-------------------------|

574.5.01 Adjustments

General Provisions 101 through 150.

Section 576—Slope Drain Pipe

576.1 General Description

This work includes furnishing and installing slope drains made of corrugated steel pipe, corrugated aluminum pipe, or corrugated smooth-lined polyethylene pipe where shown on the Plans.

576.1.01 Definitions

General Provisions 101 through 150.

576.1.02 Related References

A. Standard Specifications

Section 840—Corrugated Aluminum Alloy Pipe

Section 844—Steel Pipe

Section 845—Smooth Lined Corrugated Polyethylene (PE) Culvert Pipe

B. Referenced Documents

General Provisions 101 through 150.

576.1.03 Submittals

General Provisions 101 through 150.

576.2 Materials

Ensure that materials meet the requirements of the following Specifications:

| Material | Specification |
|--|----------------------|
| Corrugated Aluminum Alloy Slope Drain Pipe | 840.2.02 |
| Corrugated Steel Culvert Pipe | 844.2.01 |
| Corrugated Smooth Lined PE Pipe | 845.2.01 |

Ensure that the nominal thickness of the metal for slope drain pipe conforms to the minimum thickness or gauge specified in the design tables, unless otherwise shown on the Plans.

576.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

576.3 Construction Requirements

576.3.01 Personnel

General Provisions 101 through 150.